

# ARMSTRONG

## TOOL HOLDERS



for  
LATHES  
PLANERS  
SHAPERS

CATALOG No. THB-49".

3  
9  
11  
13  
16  
18  
20

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## ARMSTRONG TOOL HOLDERS

**A Complete Economical and Efficient System of High Speed Lathe and Planer Tools**

Heavy loss in time and material is inseparable from the use of forged lathe shaper and planer tools, and this loss has been proportionately increased rather than reduced by the almost universal use of High Speed Steel which has greatly increased the "dead" investment" in heavy forged tools, which in many cases are required for occasional use only, while the steel wasted in "stub ends," forging and grinding figures a loss many times greater than was formerly the case with forged tools made of carbon tool steel.

ARMSTRONG Tool Holders are designed and proportioned on lines which our many years of experience and close study in this, our special field of work, have shown to be correct; they are drop forged from a special steel which combines stiffness and strength to a remarkable degree and are accurately machined, heat treated and hardened.

The set screws are made of treated alloy steel with hardened point and are practically unbreakable.

The cutters for ARMSTRONG Tool Holders are of stock size and shapes which are readily obtainable, thus enabling the user to make his cutters from any steel may prefer and leaving him independent in choosing his source of supply.

When you decide to adopt the Armstrong System, don't stop when you have equipped a few of your small lathes or you will fail to reap the full advantage or to realize fully the economy, convenience and efficiency which a complete equipment will demonstrate.

Remember, that for heavy duty we furnish proportionately larger and stronger tool holders and cutters, and the Armstrong principle is just as efficient and economical in the large tools as in the smaller sizes.

**Adopt the Armstrong System—Do it at Once.**



# ARMSTRONG

## Turning Tool Holder

ARMSTRONG Turning Tool Holders are drop forged from a special steel and are accurately machined, heat treated and hardened. The set screws are made of treated alloy steel with hardened point.



### Straight Shank

ARMSTRONG Turning Tool Holders are furnished in straight shank, right-hand offset and left-hand offset patterns.

Each tool is boxed separately and price includes wrench and one ARMSTRONG High Speed Cutter Bit.

No. *Left Hand	No. Straight Shank	No. †Right Hand	Size of Holder	Size of Cut- ters Square	Nom. Height Bot. of Shank to Cutter Point
<b>000-L</b>	<b>000-S</b>	<b>000-R</b>	$5/16 \times 1/2 \times 4$	$3/16$	$1/2''$
<b>00-L</b>	<b>00-S</b>	<b>00-R</b>	$5/16 \times 3/4 \times 4 1/2$	$3/16$	$11/16''$
<b>0-L</b>	<b>0-S</b>	<b>0-R</b>	$3/8 \times 7/8 \times 5$	$1/4$	$13/16''$
<b>1-L</b>	<b>1-S</b>	<b>1-R</b>	$1/2 \times 1 1/8 \times 6$	$5/16$	$1 1/16''$
<b>2-L</b>	<b>2-S</b>	<b>2-R</b>	$5/8 \times 1 3/8 \times 7$	$3/8$	$1 1/4''$
<b>3-L</b>	<b>3-S</b>	<b>3-R</b>	$3/4 \times 1 5/8 \times 8$	$7/16$	$1 15/32''$
<b>4-L</b>	<b>4-S</b>	<b>4-R</b>	$7/8 \times 1 3/4 \times 9$	$1/2$	$1 21/32''$
<b>5-L</b>	<b>5-S</b>	<b>5-R</b>	$1 \times 2 \times 11$	$5/8$	$2''$
<b>6-L</b>	<b>6-S</b>	<b>6-R</b>	$1 1/4 \times 2 1/4 \times 13$	$3/4$	$2 7/16''$
<b>7-L</b>	<b>7-S</b>	<b>7-R</b>	$1 1/2 \times 2 1/2 \times 16$	$7/8$	$2 13/16''$
<b>750-L</b>	<b>750-S</b>	<b>750-R</b>	$1 5/8 \times 2 3/4 \times 18$	$1$	$3 1/8''$
<b>800-L</b>	<b>800-S</b>	<b>800-R</b>	$1 3/4 \times 3 \times 20$	$1 1/8$	$3 3/8''$

\*Left Hand tool is offset to the right.

†Right Hand tool is offset to the left.

For Extra High Speed Cutter Bits see Page 24.





## ARMSTRONG

### Drop Head Tool Holders

ARMSTRONG Drop Head Turning Tool Holders are designed especially for use on lathes of British and European make having a clamp tool rest and American lathes of similar design with high slide rest or lower centers. The head and screw are extra heavy and the "goose-neck" shape of holder makes it an excellent shaper and planer tool.



**Straight Shank**

Drop forged from special steel, accurately machined, heat treated and hardened. The set screws are made of treated alloy steel with hardened point.

ARMSTRONG Turning Tool Holders are furnished in straight shank right-hand offset and left-hand offset patterns.

Each tool is boxed separately and price includes wrench and one ARMSTRONG High Speed Cutter Bit.

No. *Left Hand	No. Straight Shank	No. †Right Hand	Size of Holder	Size of Cut- ters Square	Nom. Height Bot. of Shank to Cutter Point
100-L	100-S	100-R	$\frac{1}{2} \times \frac{5}{8} \times 6$	$\frac{3}{16}$	$\frac{9}{16}$
101-L	101-S	101-R	$\frac{5}{8} \times \frac{3}{4} \times 7 \frac{1}{2}$	$\frac{1}{4}$	$\frac{11}{16}$
201-L	201-S	201-R	$\frac{3}{4} \times \frac{7}{8} \times 8 \frac{1}{2}$	$\frac{5}{16}$	$\frac{13}{16}$
102-L	102-S	102-R	$\frac{7}{8} \times 1 \times 9 \frac{1}{2}$	$\frac{3}{8}$	$\frac{15}{16}$
301-L	301-S	301-R	$1 \times 1 \frac{1}{8} \times 10 \frac{1}{2}$	$\frac{7}{16}$	$1 \frac{1}{16}$
103-L	103-S	103-R	$1 \frac{1}{8} \times 1 \frac{1}{4} \times 11 \frac{1}{2}$	$\frac{1}{2}$	$1 \frac{3}{16}$
104-L	104-S	104-R	$1 \frac{3}{8} \times 1 \frac{1}{2} \times 13 \frac{1}{2}$	$\frac{5}{8}$	$1 \frac{5}{16}$
105-L	105-S	105-R	$1 \frac{5}{8} \times 1 \frac{3}{4} \times 15 \frac{1}{2}$	$\frac{3}{4}$	$1 \frac{1}{2}$
106-L	106-S	106-R	$1 \frac{7}{8} \times 2 \times 17 \frac{1}{2}$	$\frac{7}{8}$	$1 \frac{3}{4}$
107-L	107-S	107-R	$2 \frac{1}{8} \times 2 \frac{1}{4} \times 19 \frac{1}{2}$	1	2

\*Left Hand tool is offset to the right.

†Right Hand tool is offset to the left.

For Extra High Speed Cutter Bits see Page 24.





## ARMSTRONG Carbide Tool Holder

These Tool Holders are designed especially for holding carbide tipped cutters. The cutter is held parallel to the shank of the tool. They are made in two patterns, one to hold square cutters and the other to hold heavy duty cutters. These Tool Holders are also well adapted for shaper and planer work, due to the cutter being held parallel with the shank. The ARMSTRONG qualities of great strength, compactness and highest quality are of course found in these tools.



Furnished in straight shank, right or left offset without cutter.

Each Tool Holder is boxed separately and price includes wrench but no cutter.

### For Square Cutters

No. *Left Hand	No. Straight Shank	No. †Right Hand	Size of Holder	Size Cutter	Nom. Hgt. Bottom of shank to cutter Point
<b>T-0-L</b>	<b>T-0-S</b>	<b>T-0-R</b>	$\frac{3}{8} \times 1\frac{15}{16} \times 6$	$\frac{1}{4}$ sq.	$1\frac{11}{16}$ "
<b>T-1-L</b>	<b>T-1-S</b>	<b>T-1-R</b>	$\frac{1}{2} \times 1\frac{1}{4} \times 7$	$\frac{1}{16}$ sq.	$\frac{7}{8}$ "
<b>T-2-L</b>	<b>T-2-S</b>	<b>T-2-R</b>	$\frac{5}{8} \times 1\frac{1}{2} \times 8$	$\frac{3}{8}$ sq.	1"
<b>T-3-L</b>	<b>T-3-S</b>	<b>T-3-R</b>	$\frac{3}{4} \times 1\frac{3}{4} \times 9$	$\frac{7}{16}$ sq.	$1\frac{1}{8}$ "
<b>T-4-L</b>	<b>T-4-S</b>	<b>T-4-R</b>	$\frac{7}{8} \times 1\frac{7}{8} \times 10$	$\frac{1}{2}$ sq.	$1\frac{1}{4}$ "
<b>T-5-L</b>	<b>T-5-S</b>	<b>T-5-R</b>	$1 \times 2\frac{1}{8} \times 12$	$\frac{5}{8}$ sq.	$1\frac{3}{8}$ "
<b>T-6-L</b>	<b>T-6-S</b>	<b>T-6-R</b>	$1\frac{1}{4} \times 2\frac{1}{4} \times 13$	$\frac{3}{4}$ sq.	$1\frac{9}{16}$ "
<b>T-7-L</b>	<b>T-7-S</b>	<b>T-7-R</b>	$1\frac{1}{2} \times 2\frac{1}{2} \times 16$	$\frac{7}{8}$ sq.	2"
<b>T-750-L</b>	<b>T-750-S</b>	<b>T-750-R</b>	$1\frac{5}{8} \times 2\frac{3}{4} \times 18$	1" sq.	$2\frac{1}{4}$ "
<b>T-800-L</b>	<b>T-800-S</b>	<b>T-800-R</b>	$1\frac{3}{4} \times 3 \times 20$	$1\frac{1}{8}$ sq.	$2\frac{1}{2}$ "

### For Heavy Duty Cutters

<b>FT-0-L</b>	<b>FT-0-S</b>	<b>FT-0-R</b>	$\frac{3}{8} \times 1\frac{15}{16} \times 6$	$\frac{1}{4} \times \frac{3}{8}$	$1\frac{11}{16}$ "
<b>FT-1-L</b>	<b>FT-1-S</b>	<b>FT-1-R</b>	$\frac{1}{2} \times 1\frac{1}{4} \times 7$	$\frac{5}{16} \times \frac{7}{16}$	$\frac{7}{8}$ "
<b>FT-2-L</b>	<b>FT-2-S</b>	<b>FT-2-R</b>	$\frac{5}{8} \times 1\frac{1}{2} \times 8$	$\frac{3}{8} \times \frac{1}{2}$	1"
<b>FT-3-L</b>	<b>FT-3-S</b>	<b>FT-3-R</b>	$\frac{3}{4} \times 1\frac{3}{4} \times 9$	$\frac{7}{16} \times \frac{9}{16}$	$1\frac{1}{8}$ "
<b>FT-4-L</b>	<b>FT-4-S</b>	<b>FT-4-R</b>	$\frac{7}{8} \times 1\frac{7}{8} \times 10$	$\frac{1}{2} \times \frac{3}{4}$	$1\frac{1}{4}$ "
<b>FT-5-L</b>	<b>FT-5-S</b>	<b>FT-5-R</b>	$1 \times 2\frac{1}{8} \times 12$	$\frac{5}{8} \times \frac{7}{8}$	$1\frac{3}{8}$ "

\*Left Hand tool is offset to the right.

†Right Hand tool is offset to the left.

For a complete list of ARMIDE Carbide-Tipped Cutters see pages 28-29.



## ARMSTRONG "C-A" Tool Holders

In ARMSTRONG "C-A" Tool Holders the cutter is held parallel to the shank of the holder which permits grinding to the correct rake and clearance and affords maximum support to the cutting edge.

The set screw pressure is distributed over a large area by means of a heavy tool steel gib movably set between cutter and screw point. This feature is combined with the usual ARMSTRONG qualities of great strength and compactness.



Furnished in straight shank, right hand offset or left hand offset

Each Tool is boxed separately and is furnished WITHOUT cutter. Wrench is included.

No. *Left Hand	No. Straight Shank	No. †Right Hand	Size of Holder	Size of Cutters Square	Nom. Hgt. Bottom of shank to cutter Point
XX-0-L	XX-0-S	XX-0-R	$\frac{3}{8} \times 1\frac{15}{16} \times 5\frac{1}{2}$	$\frac{1}{4}$	$1\frac{1}{16}$ "
XX-1-L	XX-1-S	XX-1-R	$\frac{1}{2} \times 1\frac{1}{4} \times 7$	$\frac{5}{16}$	$1\frac{1}{16}$ "
XX-2-L	XX-2-S	XX-2-R	$\frac{5}{8} \times 1\frac{1}{2} \times 7\frac{7}{8}$	$\frac{3}{8}$	$1\frac{1}{4}$ "
XX-3-L	XX-3-S	XX-3-R	$\frac{3}{4} \times 1\frac{3}{4} \times 8\frac{7}{8}$	$\frac{7}{16}$	$1\frac{3}{8}$ "
XX-4-L	XX-4-S	XX-4-R	$\frac{7}{8} \times 1\frac{7}{8} \times 9\frac{7}{8}$	$\frac{1}{2}$	$1\frac{3}{4}$ "
XX-5-L	XX-5-S	XX-5-R	1 x $2\frac{1}{8} \times 11\frac{3}{4}$	$\frac{5}{8}$	$1\frac{7}{8}$ "

\*Left Hand tool is offset to the right.

†Right Hand tool is offset to the left.

Note—See pages 26 and 27 for complete description of Armaloy Bits, Blades, Cutters and Armaloy CA Tool Sets.



## ARMSTRONG Cutting-Off Tools

The ARMSTRONG System is especially efficient when applied to cutting-off in a lathe as the cutter is adjustable to any desired clearance and the greatest support possible is obtainable under all conditions.



Furnished in straight, right and left offset.

Each tool is boxed separately and price includes wrench and one High Speed cutter blade.

No. Left Hand Off-Set	No. Straight Shank	No. Right Hand Off-Set	Size of Holder Inches	Size of Cutter, Inches	
<b>29-L</b>	<b>19</b>	<b>29-R</b>	$\frac{5}{16} \times \frac{3}{4}$	$\frac{3}{32} \times \frac{1}{2}$	
<b>30-L</b>	<b>20</b>	<b>30-R</b>	$\frac{3}{8} \times \frac{7}{8}$	$\frac{3}{32} \times \frac{5}{8}$	
<b>31-L</b>	<b>21</b>	<b>31-R</b>	$\frac{1}{2} \times 1\frac{1}{8}$	$\frac{1}{8} \times \frac{3}{4}$	
<b>32-L</b>	<b>22</b>	<b>32-R</b>	$\frac{5}{8} \times 1\frac{3}{8}$	$\frac{1}{8} \times \frac{7}{8}$	
<b>33-L</b>	<b>23</b>	<b>33-R</b>	$\frac{3}{4} \times 1\frac{5}{8}$	$\frac{3}{16} \times 1$	
<b>34-L</b>	<b>24</b>	<b>34-R</b>	$\frac{7}{8} \times 1\frac{3}{4}$	$\frac{3}{16} \times 1\frac{1}{8}$	
<b>35-L</b>	<b>25</b>	<b>35-R</b>	$1 \times 2$	$\frac{1}{4} \times 1\frac{1}{4}$	
<b>36-L</b>	<b>26</b>	<b>36-R</b>	$1\frac{1}{4} \times 2\frac{1}{4}$	$\frac{1}{4} \times 1\frac{3}{8}$	

## ARMSTRONG Spring Cutting-Off Tool

Cutting off in a lathe, always regarded as the hardest of lathe work, has been made comparatively simple by the ARMSTRONG Spring Cutting-Off Tool. The "goose neck" form



of this tool gives the cutter a resiliency that takes up any chatter and keeps the work from climbing up on the tool—the cause of practically all cutting-off tool breakage.

Furnished in straight, right and left offset.

Each tool is boxed separately and price includes Wrench and one High Speed Cutter.

No. Left Hand Offset	No. Straight	No. Right Hand Offset	Size of Shank Inches	Size of Cutter Inches	Nom. Hgt. Bottom of Shank to Cutter Point	
<b>S-30L</b>	<b>S-20</b>	<b>S-30R</b>	$\frac{3}{8} \times \frac{7}{8}$	$\frac{3}{32} \times \frac{5}{8}$	$\frac{3}{4}$ "	
<b>S-31L</b>	<b>S-21</b>	<b>S-31R</b>	$\frac{1}{2} \times 1\frac{1}{8}$	$\frac{1}{8} \times \frac{3}{4}$	$1\frac{15}{16}$ "	
<b>S-32L</b>	<b>S-22</b>	<b>S-32R</b>	$\frac{5}{8} \times 1\frac{3}{8}$	$\frac{1}{8} \times \frac{7}{8}$	$1\frac{3}{16}$ "	
<b>S-33L</b>	<b>S-23</b>	<b>S-33R</b>	$\frac{3}{4} \times 1\frac{5}{8}$	$\frac{3}{16} \times 1$	$1\frac{7}{16}$ "	

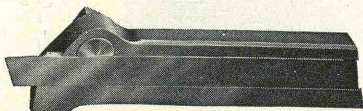
For a complete list and description of ARMSTRONG High Speed Cutter Blades see page 25.





## ARMSTRONG Side Tools

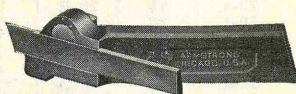
In addition to other primary use on lathes, ARMSTRONG Side Tools are well adapted for Planer and Shaper work on which they will be found exceptionally convenient and efficient.



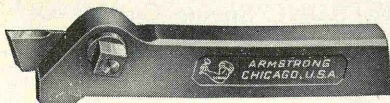
Right Hand Straight Shank



Left Hand Off-Set



Right Hand Off-Set



Left Hand Straight Shank

Each ARMSTRONG Side Tool is boxed separately and price includes wrench and one High Speed Cutter Blade.

Offset		Straight		Size of Shank	
No. Left Hand	No. Right Hand	No. Left Hand	No. Right Hand		
69-L	69-R	79-L	79-R	$\frac{5}{16} \times \frac{3}{4}$	
70-L	70-R	80-L	80-R	$\frac{3}{8} \times \frac{7}{8}$	
71-L	71-R	81-L	81-R	$\frac{1}{2} \times 1\frac{1}{8}$	
72-L	72-R	82-L	82-R	$\frac{5}{8} \times 1\frac{3}{8}$	
73-L	73-R	83-L	83-R	$\frac{3}{4} \times 1\frac{5}{8}$	
74-L	74-R	84-L	84-R	$\frac{7}{8} \times 1\frac{3}{4}$	
75-L	75-R	85-L	85-R	1 x 2	
76-L	76-R	86-L	86-R	$1\frac{1}{4} \times 2\frac{1}{4}$	

For extra High Speed Cutter Blades see page 25.



## ARMSTRONG Boring Tools

The convenience and many practical advantages of the ARMSTRONG system of boring tools are known and appreciated in almost every modern machine shop. A half turn of one screw clamps or releases the bar which can be extended from the shank or holder to any desired length, giving the greatest degree of stiffness possible on every job.

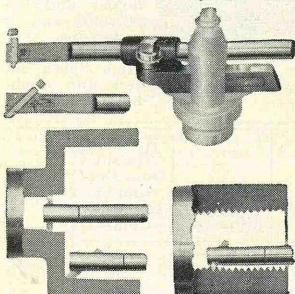


Fig. 1

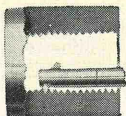


Fig. 2

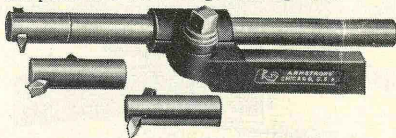
The end caps used with this tool lock the cutters rigidly under a tool steel "automatic set screw" which cannot loosen while the tool is cutting, yet instantly releases the cutter for removal. The end caps are interchangeable without removing the bar. They are furnished in three styles: 90° for boring with single or double end cutter; 45° for boring and facing; and 30° for internal threading.

Fig. 1— The above cut shows 90° end cap with double end cutter roughing out cored hole and also 45° end cap cutter boring and facing end.

Fig. 2— Showing 30° end cap cutting internal thread.

## Armstrong Boring Tools

Require no forging or tempering and very little grinding. They are always ready for use, are very stiff and will bore close up to a shoulder or bottom. One ARMSTRONG Boring Tool will take the place of a dozen forged boring tools.



Price includes Holder and Bar, 90°, 45° and 30° End Caps, three High Speed Cutters and Double Head Wrench.

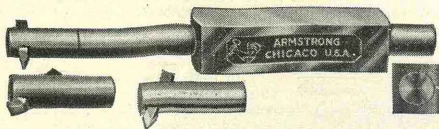
No.	Size Shank, Inches	Diam. Bar Inch	Size Cutter Inch Square	Nom. Hgt. Bottom of Shank to Center
<b>00B</b>	$\frac{5}{16} \times \frac{3}{4}$	$\frac{1}{2}$	$\frac{3}{16}$	$\frac{3}{4}$ "
<b>8</b>	$\frac{3}{8} \times \frac{7}{8}$	$\frac{9}{16}$	$\frac{3}{16}$	$\frac{7}{8}$ "
<b>9</b>	$\frac{1}{2} \times 1 \frac{1}{8}$	$\frac{3}{4}$	$\frac{1}{4}$	$1 \frac{1}{8}$ "
<b>10</b>	$\frac{5}{8} \times 1 \frac{3}{8}$	$\frac{15}{16}$	$\frac{5}{16}$	$1 \frac{1}{4}$ "
<b>11</b>	$\frac{3}{4} \times 1 \frac{5}{8}$	$1 \frac{1}{8}$	$\frac{3}{8}$	$1 \frac{1}{2}$ "
<b>12</b>	$\frac{7}{8} \times 1 \frac{3}{4}$	$1 \frac{1}{16}$	$\frac{7}{16}$	$1 \frac{5}{8}$ "
<b>13</b>	1 x 2	$1 \frac{1}{2}$	$\frac{1}{2}$	$1 \frac{3}{4}$ "



## ARMSTRONG Boring Tools

Especially designed for use on lathes of British and European make having clamp tool rest and American lathes of similar design.

Each Tool is boxed separately and price includes holder and bar, 90°, 45°, and 30° end caps, three ARMSTRONG High Speed cutters and double head wrench.

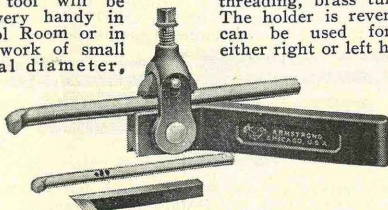


No.	Size of Shank	Diameter of Bar	Size of Cutter Square	Nominal Height from Bottom of Holder to Center
108	$\frac{3}{4} \times \frac{7}{8}$	$\frac{9}{16}$	$\frac{3}{16}$	$\frac{7}{16}$
109	1 x $1\frac{1}{8}$	$\frac{3}{4}$	$\frac{1}{4}$	$\frac{9}{16}$
110	$1\frac{1}{4} \times 1\frac{3}{8}$	$\frac{15}{16}$	$\frac{5}{16}$	$\frac{11}{16}$
111	$1\frac{1}{2} \times 1\frac{5}{8}$	1 $\frac{1}{8}$	$\frac{3}{8}$	$\frac{13}{16}$
112	$1\frac{3}{4} \times 1\frac{7}{8}$	1 $\frac{5}{16}$	$\frac{7}{16}$	$\frac{15}{16}$
113	2 x $2\frac{1}{8}$	1 $\frac{1}{2}$	$\frac{1}{2}$	1 $\frac{1}{16}$
114	$2\frac{1}{4} \times 2\frac{3}{8}$	1 $\frac{13}{16}$	$\frac{5}{8}$	1 $\frac{3}{16}$

## ARMSTRONG Boring Tool Holder

This tool will be found very handy in the Tool Room or in boring work of small internal diameter,

threading, brass turning, etc. The holder is reversible, and can be used for turning either right or left hand.



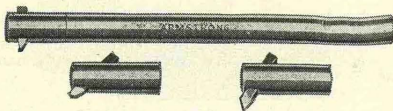
No.	Size of Shank Inches	Size of Bars Furnished Diam. In.	Size of Square Cutter Inches	Extra Boring Bars
15	$\frac{3}{8} \times \frac{3}{4}$	$\frac{3}{16}$ and $\frac{1}{4}$	$\frac{1}{4}$	$\frac{1}{8}$
16	$\frac{1}{2} \times 1$	$\frac{3}{16}$ and $\frac{5}{16}$	$\frac{5}{16}$	$\frac{3}{16}$
17	$\frac{5}{8} \times 1\frac{1}{4}$	$\frac{1}{4}$ and $\frac{3}{8}$	$\frac{3}{8}$	$\frac{1}{4}$
18	$\frac{3}{4} \times 1\frac{1}{2}$	$\frac{5}{16}$ and $\frac{7}{16}$	$\frac{7}{16}$	$\frac{5}{16}$
--	-----	-----	--	$\frac{3}{8}$
--	-----	-----	--	$\frac{7}{16}$





## ARMSTRONG Boring Bars End Cap Pattern

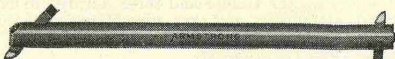
The End Caps of this Boring Bar are interchangeable for boring, facing or internal threading without removing the bar from the holder.



Furnished complete with 90°, 45° and 30° End Caps, three High Speed Cutters, Double Head Wrench and Bushing.

No.	Diam. Inches	Length Inches	Size of Cutter	With Bushing to Fit Shank
<b>0B</b>	$1\frac{1}{2}$	8	$\frac{3}{16}$	No. 8, 9 or 10
<b>08</b>	$\frac{9}{16}$	9	$\frac{3}{16}$	No. 9, 10 or 11
<b>09</b>	$\frac{3}{4}$	11	$\frac{1}{4}$	No. 10, 11 or 12
<b>010</b>	$\frac{15}{16}$	13	$\frac{5}{16}$	No. 11, 12 or 13
<b>011</b>	$1\frac{1}{8}$	16	$\frac{3}{8}$	No. 12 or 13
<b>012</b>	$1\frac{5}{16}$	18	$\frac{7}{16}$	No. 13
<b>013</b>	$1\frac{1}{2}$	23	$1\frac{1}{2}$	Without Bushing
<b>014</b>	$1\frac{13}{16}$	28	$\frac{5}{8}$	Without Bushing

## Plain Bar



Price includes two High Speed Cutters, hollow set screw Wrench and Bushing.

No.	Diam. Inches	Length Inches	Size of Cutter	With Bushing to Fit Shank
<b>0B-X</b>	$1\frac{1}{2}$	8	$\frac{3}{16}$	No. 8, 9 or 10
<b>08-X</b>	$\frac{9}{16}$	9	$\frac{3}{16}$	No. 9, 10 or 11
<b>09-X</b>	$\frac{3}{4}$	11	$\frac{1}{4}$	No. 10, 11 or 12
<b>010-X</b>	$\frac{15}{16}$	13	$\frac{5}{16}$	No. 11, 12 or 13
<b>011-X</b>	$1\frac{1}{8}$	16	$\frac{3}{8}$	No. 12 or 13
<b>012-X</b>	$1\frac{5}{16}$	18	$\frac{7}{16}$	No. 13
<b>013-X</b>	$1\frac{1}{2}$	23	$1\frac{1}{2}$	Without Bushing
<b>014-X</b>	$1\frac{13}{16}$	28	$\frac{5}{8}$	Without Bushing

NOTE—In ordering be careful to give size of shank (or number of tool) in which bar is to be used. When this information is not given no bushing will be included.

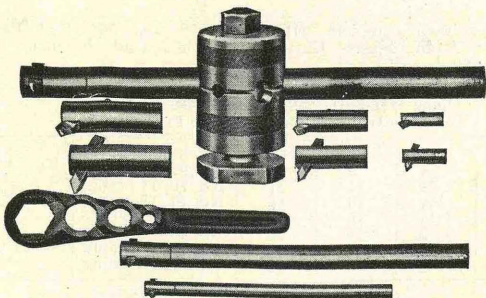


## ARMSTRONG 3-Bar Boring Tool

The many points of advantage of this lathe attachment will be appreciated by practical machinists.

A slight turn of one nut releases or fastens both Bar and Holder.

Bars can be changed as needed almost instantly, thus allowing the operator to use the stiffest bar possible for each job, with the result that speeds and feeds can be increased and time saved.



The set comprises the Holder and three ARMSTRONG Boring Bars with 90°, 45° and 30° end caps, nine High Speed Cutters and ARMSTRONG Combination Wrench.

No.	Diameter Bars Inches	Length of Bars Inches	Size Cutters Inches Square	For Lathes Swing Inches
<b>0-BB</b>	* $\frac{3}{8}$ , $\frac{1}{2}$ , $\frac{3}{4}$	7, 8, 11	*, $\frac{3}{16}$ , $\frac{1}{4}$	8 to 10
<b>1-B</b>	$\frac{1}{2}$ , $\frac{3}{4}$ , $1 \frac{1}{8}$	8, 11, 16	$\frac{3}{16}$ , $\frac{1}{4}$ , $\frac{3}{8}$	12 to 16
<b>2-B</b>	$\frac{9}{16}$ , $1 \frac{5}{16}$ , $1 \frac{5}{8}$	9, 13, 18	$\frac{3}{16}$ , $\frac{5}{16}$ , $\frac{7}{16}$	16 to 18
<b>3-B</b>	$\frac{3}{4}$ , $1 \frac{1}{8}$ , $1 \frac{1}{2}$	11, 16, 23	$\frac{1}{4}$ , $\frac{3}{8}$ , $\frac{1}{2}$	20 to 22
<b>4-B</b>	$1 \frac{5}{16}$ , $1 \frac{5}{8}$ , $1 \frac{13}{16}$	13, 18, 28	$\frac{5}{16}$ , $\frac{7}{16}$ , $\frac{5}{8}$	24 to 32

\* $\frac{3}{8}$ " Bar is solid.

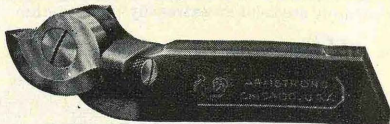
Note—Bolt Head and Bottom part of Holder are made of ample size to allow for fitting, which is necessary on account of the great variation in height of centers above slide rest and difference in sizes of T slots.

Fitting—An extra charge will be made for fitting holders to the lathe on which the tool is to be used. No. 0-BB, \$2.00 net, Nos. 1-B and 2-B, \$3.50 net, Nos. 3-B and 4-B, \$5.50 net.



## ARMSTRONG Threading Tools

Simplicity, Strength and Permanence of Adjustment are Prominent Features of this Tool for as a Threading tool is essentially a forming tool, any error or inaccuracy of shape or angle in the tool point will surely be reproduced in the thread and must result in poorly fitted work.



Each tool is equipped with one sharp V thread cutter and a drop forged wrench.

No.	Size of Holder, Inches		
<b>00T</b>	$\frac{5}{16} \times \frac{3}{4} \times 5$		
<b>50</b>	$\frac{3}{8} \times \frac{7}{8} \times 5$		
<b>51</b>	$\frac{1}{2} \times 1 \frac{1}{8} \times 6$		
<b>52</b>	$\frac{5}{8} \times 1 \frac{3}{8} \times 7$		
<b>53</b>	$\frac{3}{4} \times 1 \frac{5}{8} \times 8$		
<b>54</b>	$\frac{7}{8} \times 1 \frac{3}{4} \times 9$		

Note—Sharp V 60° Form Thread Cutters shipped unless otherwise specified.

## ARMSTRONG Spring Threading Tool

Cutter can be held  
at different angles



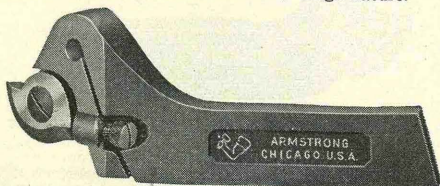
No.	Size of Holder Inches	Size Cutter Inches Square	Nom. Hgt. Bottom of Shank to Cutter Point		
<b>S-50</b>	$\frac{3}{8} \times \frac{7}{8} \times 5 \frac{1}{2}$	$\frac{1}{4}$	$\frac{5}{8}''$		
<b>S-51</b>	$\frac{1}{2} \times 1 \frac{1}{8} \times 6 \frac{1}{2}$	$\frac{5}{16}$	$\frac{3}{4}''$		
<b>S-52</b>	$\frac{5}{8} \times 1 \frac{3}{8} \times 7 \frac{1}{2}$	$\frac{3}{8}$	$1 \frac{1}{16}''$		
<b>S-53</b>	$\frac{3}{4} \times 1 \frac{5}{8} \times 8 \frac{1}{2}$	$\frac{7}{16}$	$1 \frac{3}{8}''$		





## ARMSTRONG Spring Threading Tool

The ARMSTRONG Spring Threading Tool is designed to combine strength and convenience of adjustment and operation with the resiliency necessary in obtaining a smooth, finished thread especially on alloy steels of an extremely tough nature.



Each Tool is boxed separately and price includes wrench and one sharp V-thread cutter unless otherwise ordered.

No.	Size of Holder	Nom. Hgt. Bottom of Shank to Cutter Point	
<b>NS-50</b>	$\frac{3}{8} \times \frac{7}{8} \times 5\frac{1}{2}$	$\frac{7}{8}''$	
<b>NS-51</b>	$\frac{1}{2} \times 1\frac{1}{8} \times 6\frac{1}{2}$	$1\frac{1}{4}''$	
<b>NS-52</b>	$\frac{5}{8} \times 1\frac{3}{8} \times 7\frac{1}{2}$	$1\frac{3}{8}''$	
<b>NS-53</b>	$\frac{3}{4} \times 1\frac{5}{8} \times 8\frac{1}{2}$	$1\frac{5}{8}''$	

When ordering tools equipped with American Standard Thread Form Coarse (NC) and Fine (NF) cutters or Whitworth Standard Thread Form (B.S.W.) cutters be sure to specify pitch or number of threads per inch wanted. For list of pitches available see below

## ARMSTRONG Formed Cutters for Threading Tools

ARMSTRONG Formed Cutters for use with ARMSTRONG Threading Tools are drop forged from selected High Speed Steel

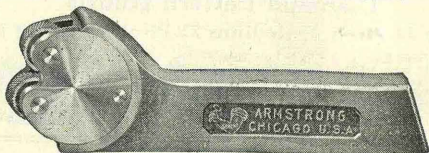
We make and carry in stock single point cutters in treated High Speed Steel, to cut the pitches listed below in Sharp V-thread, American Standard Thread Form Coarse (NC) or Fine (NF) series and Whitworth Standard Thread Form (B.S.W.).

For Tool No.	00T, 50 & NS-50	51 & NS-51	52 & NS-52	53, NS-53 & 54
Stand. Pitches Avail.	6 to 20 Incl.	5 to 20 Incl.	4 to 20 Incl.	3 to 20 Incl.
Sharp V-thread	No. <b>8151</b>	No. <b>8153</b>	No. <b>8155</b>	No. <b>8157</b>
Amer. Std. Coarse (NC)	<b>8161</b>	<b>8163</b>	<b>8165</b>	<b>8167</b>
Amer. Std. Fine (NF)	<b>8168</b>	<b>8169</b>	<b>8170</b>	<b>8150</b>
Whitw'h Std. (B.S.W.)	<b>8171</b>	<b>8173</b>	<b>8175</b>	<b>8177</b>



## ARMSTRONG Knurling Tool

This tool is self centering and the knuckle or joint has ample bearing to resist the severe strains of both end and side thrust. In these essentials the ARMSTRONG knurling tool is unexcelled. The Knurls and Pins are accurately made of Tool Steel suitably tempered. All other parts are Drop Forged or Bar Steel, hardened.

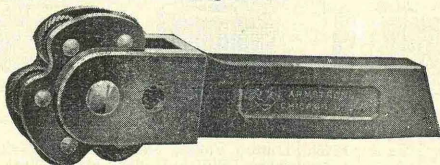


No.	Size of Holder Inches	Dimensions of Knurls Inches			Knurling Capacity Diameter
		Diam.	Face (Std.)	Hole	
<b>00-K</b>	$\frac{5}{16} \times \frac{3}{4} \times 5$	$\frac{5}{8}$	$\frac{3}{16}$	$\frac{7}{32}$	$\frac{1}{8}$ up
<b>0-K</b>	$\frac{3}{8} \times \frac{7}{8} \times 5 \frac{1}{2}$	$\frac{5}{8}$	$\frac{3}{16}$	$\frac{7}{32}$	$\frac{1}{8}$ up
<b>1-K</b>	$\frac{1}{2} \times 1 \frac{1}{8} \times 6 \frac{1}{2}$	$\frac{3}{4}$	$\frac{1}{4}$	$\frac{1}{4}$	$\frac{3}{16}$ up
<b>2-K</b>	$\frac{5}{8} \times 1 \frac{3}{8} \times 7 \frac{1}{2}$	$\frac{3}{4}$	$\frac{1}{4}$	$\frac{1}{4}$	$\frac{3}{16}$ up
<b>4-K</b>	$\frac{7}{8} \times 1 \frac{3}{4} \times 9$	1	$\frac{1}{4}$	$\frac{5}{16}$	$\frac{1}{4}$ up

## ARMSTRONG Knurling Tool

### With Revolving Head

The advantages of this tool are apparent at a glance. The revolving head is fitted with three pairs of knurls, fine, medium and coarse, either of which can be used without the inconvenience and loss of time incident to changing knurls.



No.	Size of Holder Inches	Dimensions of Knurls Inches			Knurling Capacity Diameters
		Diam.	Face (Std.)	Hole	
<b>3-K-00</b>	$\frac{5}{16} \times \frac{3}{4} \times 5$	$\frac{5}{8}$	$\frac{3}{16}$	$\frac{7}{32}$	$\frac{3}{16}$ up
<b>3-K-0</b>	$\frac{3}{8} \times \frac{7}{8} \times 5 \frac{1}{2}$	$\frac{5}{8}$	$\frac{3}{16}$	$\frac{7}{32}$	$\frac{3}{16}$ up
<b>3-K-1</b>	$\frac{1}{2} \times 1 \frac{1}{8} \times 6 \frac{1}{2}$	$\frac{3}{4}$	$\frac{1}{4}$	$\frac{1}{4}$	$\frac{1}{4}$ up
<b>3-K-2</b>	$\frac{5}{8} \times 1 \frac{3}{8} \times 7 \frac{1}{2}$	$\frac{3}{4}$	$\frac{1}{4}$	$\frac{1}{4}$	$\frac{1}{4}$ up

Standard Face Diamond Knurls furnished unless others are specified.

Note—For a complete listing of extra Knurls see page 16.



## ARMSTRONG Knurls

ARMSTRONG Hob Cut Knurls are furnished in pairs to fit all standard makes of Knurling tools and are obtainable in diamond or straight line pattern, either standard or full face. When ordering a pair of knurls be sure to order by catalog number.

### Diamond Pattern Knurls

Coarse 14 Pitch      Medium 21 Pitch      Fine 33 Pitch



Stand. Face No.	Full Face No.	Pitch	Dimensions of Knurls				
			Diam- eter	Stand. Face Width	Full Face Width	Hole Diam- eter	Thick- ness
8221	8241	14	} $\frac{5}{8}$	$\frac{3}{16}$	$\frac{5}{16}$	$\frac{7}{32}$	$\frac{5}{16}$
8224	8244	21					
8227	8247	33					
8222	8242	14	} $\frac{3}{4}$	$\frac{1}{4}$	$\frac{3}{8}$	$\frac{1}{4}$	$\frac{3}{8}$
8225	8245	21					
8228	8248	33					
8223	8243	14	} 1	$\frac{1}{4}$	$\frac{3}{8}$	$\frac{5}{16}$	$\frac{3}{8}$
8226	8246	21					
8229	8249	33					

### Straight Line Knurls

Coarse 14 Pitch      Medium 21 Pitch      Fine 33 Pitch



Stand. Face No.	Full Face No.	Pitch	Dimensions of Knurls				
			Diam- eter	Stand. Face Width	Full Face Width	Hole Diam- eter	Thick- ness
8261	8271	14	} $\frac{5}{8}$	$\frac{3}{16}$	$\frac{5}{16}$	$\frac{7}{32}$	$\frac{5}{16}$
8264	8274	21					
8267	8277	33					
8262	8272	14	} $\frac{3}{4}$	$\frac{1}{4}$	$\frac{3}{8}$	$\frac{1}{4}$	$\frac{3}{8}$
8265	8275	21					
8268	8278	33					
8263	8273	14	} 1	$\frac{1}{4}$	$\frac{3}{8}$	$\frac{5}{16}$	$\frac{3}{8}$
8266	8276	21					
8269	8279	33					

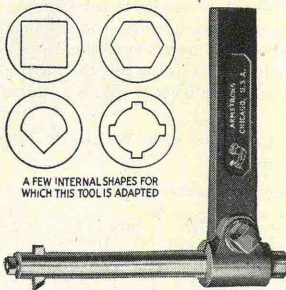
Note—Pitch=number of teeth per linear inch.





## ARMSTRONG Extension Shaper Tool

This is an extremely rigid and convenient tool, well adapted for cutting internal key ways, or for any kind of work on the Shaper in which extra clearance is needed.



A FEW INTERNAL SHAPES FOR WHICH THIS TOOL IS ADAPTED

### Price List—Complete with Holder and one Bar, one High Speed Cutter and Wrench

No.	Size Shank Inches	Size Bar Inches	Size Cutter Inch Square
*46	$\frac{3}{8} \times \frac{7}{8}$	$\frac{1}{2} \times 7\frac{1}{2}$	$\frac{3}{16}$
47	$\frac{1}{2} \times 1\frac{1}{8}$	$\frac{3}{4} \times 10$	$\frac{5}{16}$
48	$\frac{5}{8} \times 1\frac{3}{8}$	$1\frac{5}{16} \times 12$	$\frac{3}{8}$
49	$\frac{3}{4} \times 1\frac{5}{8}$	$1\frac{1}{8} \times 14$	$\frac{7}{16}$

\*No. 46 Bar held by two hollow set screws.

### Extra Bars and Bushings—Price includes Bar, one Bushing, a High Speed Cutter and Wrench

Dimensions of Bar		Size of Cutter Inches Square	With Bushing to Fit Shank Number
Diam. Inches	Length Inches		
$\frac{1}{2}$	$7\frac{1}{2}$	$\frac{3}{16}$	47, 48 or 49
$\frac{5}{8}$	$8\frac{1}{2}$	$\frac{1}{4}$	47, 48 or 49
$\frac{3}{4}$	10	$\frac{5}{16}$	48 or 49
$1\frac{5}{16}$	12	$\frac{3}{8}$	49
$1\frac{1}{8}$	14	$\frac{7}{16}$	Without Bush.

Note—In ordering be careful to give size of shank (or number of tool) in which bar is to be used. When this information is not given no bushing will be included.



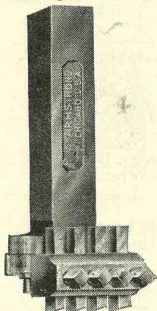
## ARMSTRONG Planer and Shaper Tools

This tool has fewer parts than any other on the market consequently it is stronger, simpler and at the same time is adapted for use at any angle, right or left hand. Costs less than a High Speed Forged Tool. Effectively it equals a dozen.

Complete with Wrench and One High Speed Cutter

No.	Size of Holder Inches	Size of Cutter Inches	
39*	$\frac{3}{8} \times \frac{7}{8} \times 5\frac{1}{2}$	$\frac{1}{4} \times \frac{1}{4}$	
40*	$\frac{1}{2} \times 1 \times 6$	$\frac{1}{4} \times \frac{3}{8}$	
401*	$\frac{5}{8} \times 1\frac{1}{4} \times 8\frac{1}{2}$	$\frac{5}{16} \times \frac{7}{16}$	
41*	$\frac{3}{4} \times 1\frac{1}{2} \times 10$	$\frac{3}{8} \times \frac{1}{2}$	
42	$1\frac{1}{8} \times 1\frac{3}{4} \times 13$	$\frac{1}{2} \times \frac{3}{4}$	
43	$1\frac{3}{8} \times 2 \times 16$	$\frac{5}{8} \times \frac{7}{8}$	
44	$1\frac{7}{8} \times 2\frac{1}{4} \times 19$	$\frac{3}{4} \times 1$	
45	$2\frac{1}{8} \times 2\frac{3}{4} \times 22$	$\frac{7}{8} \times 1\frac{1}{8}$	

\*Shaper sizes.



## ARMSTRONG Gang Planer Tools For Planing Large Surfaces

This tool is especially adapted for surfacing large castings and on this class of work it will effect a saving of 50 to 75 per cent in the time required to do the job with a single point tool.

As each chip is comparatively light, with this tool a planer will carry with ease a feed and depth of cut much greater than is possible when using an ordinary tool and there is much less tendency to "break out" at the end of cut.

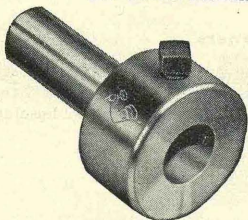
Each tool is boxed separately and price includes one set (4) ARMSTRONG High Speed Cutters, wrench and grinding gauge.

No.	Size of Shank	Length Over All	Size of Cutter	Feed Adjust- ment	
61	$1\frac{1}{4} \times 1\frac{3}{4} \times 7\frac{1}{2}$	10	$\frac{3}{8} \times \frac{1}{2}$	0 to $\frac{1}{4}$	
62	$1\frac{5}{8} \times 2\frac{1}{4} \times 9$	12	$\frac{1}{2} \times \frac{3}{4}$	0 to $\frac{3}{8}$	
63	$2 \times 2\frac{1}{2} \times 11$	14	$\frac{5}{8} \times \frac{7}{8}$	0 to $\frac{1}{2}$	



## ARMSTRONG Tool Holders

For Screw Machines and Turret Lathes



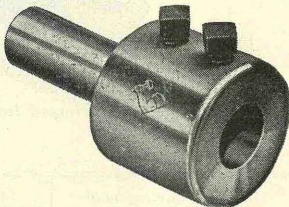
### Plain Drill Holders

This tool is used for holding drills, reamers, counter-bores, hollow mills and flat cutters. Price includes Wrench.

No.	Dimensions of Shank			Dimensions of Head			Extreme Length Inches
	Out-side Dia.	Dia. Hole	Lgth.	Out-side Dia.	Dia. Hole	Depth Hole	
600	$\frac{5}{8}$	$\frac{13}{32}$	2	$1\frac{3}{4}$	$\frac{3}{4}$	$\frac{3}{4}$	3
601	$\frac{3}{4}$	$\frac{13}{32}$	2	$1\frac{3}{4}$	$\frac{3}{4}$	$\frac{3}{4}$	3
602	$\frac{7}{8}$	$\frac{15}{32}$	$2\frac{3}{8}$	2	$\frac{7}{8}$	$\frac{7}{8}$	$3\frac{1}{2}$
603	1	$\frac{17}{32}$	$2\frac{3}{4}$	$2\frac{1}{4}$	1	1	4
604	$1\frac{1}{4}$	$\frac{25}{32}$	$3\frac{1}{2}$	$2\frac{7}{8}$	$1\frac{1}{4}$	$1\frac{1}{4}$	$5\frac{1}{8}$
605	$1\frac{1}{2}$	$1\frac{1}{32}$	$4\frac{3}{8}$	3	$1\frac{1}{2}$	$1\frac{1}{2}$	$6\frac{1}{4}$

### Drill Holders

This tool will hold either straight or taper shank drills. Bushing hole is extra deep for a rigid hold on the drill. Price includes Wrench.



No.	Dimensions of Shank			Dimensions of Head			Extreme Length Inches
	Out-side Dia.	Dia. Hole	Lgth.	Out-side Dia.	Dia. Hole	Depth Hole	
610	$\frac{5}{8}$	$\frac{13}{32}$	$2\frac{1}{8}$	$1\frac{3}{4}$	$\frac{3}{4}$	$1\frac{1}{2}$	$1\frac{3}{8}$
611	$\frac{3}{4}$	$\frac{13}{32}$	$2\frac{1}{8}$	$1\frac{3}{4}$	$\frac{3}{4}$	$1\frac{1}{2}$	$3\frac{7}{8}$
612	$\frac{7}{8}$	$\frac{15}{32}$	$2\frac{1}{4}$	2	$\frac{7}{8}$	$1\frac{3}{4}$	$4\frac{1}{4}$
613	1	$\frac{17}{32}$	$2\frac{3}{8}$	$2\frac{1}{4}$	1	$1\frac{13}{16}$	$4\frac{1}{2}$
614	$1\frac{1}{4}$	$\frac{25}{32}$	3	$2\frac{7}{8}$	$1\frac{1}{4}$	$2\frac{1}{8}$	$5\frac{1}{2}$
615	$1\frac{1}{2}$	$1\frac{1}{32}$	$3\frac{5}{8}$	3	$1\frac{1}{2}$	$2\frac{5}{8}$	$6\frac{1}{2}$



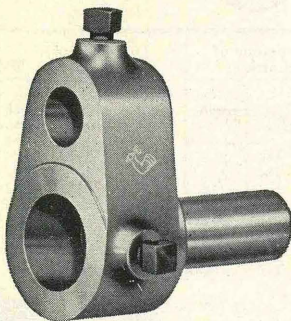


## ARMSTRONG Tool Holders

For Screw Machines and Turret Lathes

### Plain Turners

This tool is designed to combine a single cutter turning set up with drilling and boring operations. The top takes Cutter Holders (shown on pages 21 and 22), while the center tool bushing hole locates drills, boring bars and other similar tools.



These tools are drop forged from special steel. Price includes Wrench.

No.	Dimensions of Shank			Dimensions of Head			Ex- treme Length Inches
	Out- side Dia.	Dia. Hole	Lgth.	Out- side Dia.	Dia. Hole	Depth Hole	
<b>620</b>	$\frac{5}{8}$	$\frac{3}{8}$	$2\frac{1}{2}$	$\frac{3}{4}$	$\frac{3}{4}$	$1\frac{1}{8}$	$3\frac{7}{8}$
<b>621</b>	$\frac{7}{8}$	$\frac{1}{2}$	$2\frac{1}{2}$	$\frac{3}{4}$	$\frac{3}{4}$	$1\frac{1}{8}$	$3\frac{7}{8}$
<b>622</b>	1	$\frac{5}{8}$	3	$\frac{7}{8}$	$1\frac{1}{4}$	$1\frac{1}{8}$	$4\frac{1}{2}$
<b>623</b>	$1\frac{1}{4}$	$\frac{3}{4}$	$3\frac{1}{4}$	1	$1\frac{5}{8}$	$1\frac{3}{8}$	$5\frac{1}{8}$
<b>624</b>	$1\frac{1}{2}$	$\frac{7}{8}$	$3\frac{5}{8}$	$1\frac{1}{4}$	$1\frac{5}{8}$	$1\frac{3}{8}$	$5\frac{1}{2}$
<b>625</b>	$1\frac{3}{4}$	1	$3\frac{7}{8}$	$1\frac{1}{2}$	$1\frac{3}{4}$	$1\frac{1}{2}$	$5\frac{15}{16}$

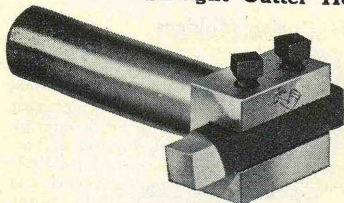
Note—For Boring Bars see page 11.



## ARMSTRONG Tool Holders

For Screw Machines and Turret Lathes

### Straight Cutter Holders

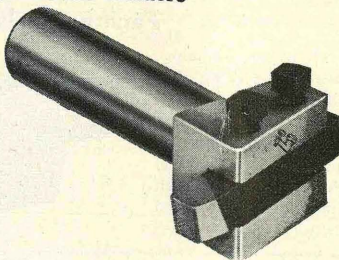


This tool is used for turning, facing, chamfering, boring and similar work. The tool slot will take either square or flat cutters. Price includes Wrench and One High Speed Cutter.

No.	Diameter of Shank Inches	Length of Shank Inches	Size of Cutter Inches	Extreme Length Inches	
630	$\frac{5}{8}$	$2\frac{1}{2}$	$\frac{1}{4} \times \frac{1}{4} \times 1\frac{3}{4}$	$3\frac{1}{8}$	
631	$\frac{3}{4}$	$2\frac{1}{2}$	$\frac{1}{4} \times \frac{1}{4} \times 1\frac{3}{4}$	$3\frac{1}{8}$	
632	$\frac{7}{8}$	$3\frac{1}{4}$	$\frac{3}{8} \times \frac{3}{8} \times 2\frac{5}{8}$	4	
633	1	4	$\frac{1}{2} \times \frac{1}{2} \times 3\frac{1}{4}$	$4\frac{7}{8}$	
634	$1\frac{1}{4}$	$4\frac{3}{4}$	$\frac{5}{8} \times \frac{5}{8} \times 4$	$5\frac{7}{8}$	
635	$1\frac{1}{2}$	$5\frac{1}{2}$	$\frac{3}{4} \times \frac{3}{4} \times 5$	$6\frac{3}{4}$	

### Angle Cutter Holders

In this tool, the cutter is held at an angle of  $15^\circ$  which provides clearance necessary for turning close to a shoulder or chuck. Price includes Wrench and One High Speed Cutter.



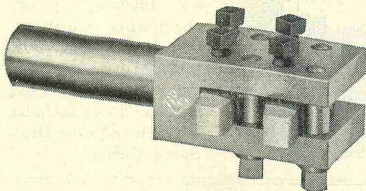
No.	Diameter of Shank Inches	Length of Shank Inches	Size of Cutter Inches	Extreme Length Inches	
640	$\frac{5}{8}$	$2\frac{1}{2}$	$\frac{1}{4} \times \frac{1}{4} \times 1\frac{3}{4}$	$3\frac{1}{4}$	
641	$\frac{3}{4}$	$2\frac{1}{2}$	$\frac{1}{4} \times \frac{1}{4} \times 1\frac{3}{4}$	$3\frac{1}{4}$	
642	$\frac{7}{8}$	$3\frac{1}{4}$	$\frac{3}{8} \times \frac{3}{8} \times 2\frac{5}{8}$	$4\frac{1}{4}$	
643	1	4	$\frac{1}{2} \times \frac{1}{2} \times 3\frac{1}{4}$	$5\frac{1}{4}$	
644	$1\frac{1}{4}$	$4\frac{3}{4}$	$\frac{5}{8} \times \frac{5}{8} \times 4$	$6\frac{1}{4}$	
645	$1\frac{1}{2}$	$5\frac{1}{2}$	$\frac{3}{4} \times \frac{3}{4} \times 5$	$7\frac{1}{4}$	



## ARMSTRONG Tool Holders

For Screw Machines and Turret Lathes

### Multiple Cutter Holders

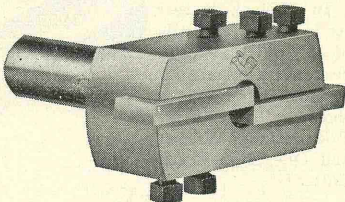


This tool is used for turning or boring two diameters and for combining facing or chamfering with turning or boring operations. Price includes Wrench and Two High Speed Cutters.

No.	Diameter of Shank Inches	Length of Shank Inches	Size of Cutter Inches	Extreme Length Inches
650	$\frac{5}{8}$	$2\frac{1}{2}$	$\frac{1}{4} \times \frac{1}{4} \times 1\frac{3}{4}$	$4\frac{5}{8}$
651	$\frac{3}{4}$	$2\frac{1}{2}$	$\frac{1}{4} \times \frac{1}{4} \times 1\frac{3}{4}$	$4\frac{5}{8}$
652	$\frac{7}{8}$	$3\frac{1}{4}$	$\frac{3}{8} \times \frac{3}{8} \times 2\frac{5}{8}$	$5\frac{13}{16}$
653	1	$3\frac{1}{4}$	$\frac{1}{2} \times \frac{1}{2} \times 3\frac{1}{4}$	$6\frac{1}{4}$
654	$1\frac{1}{4}$	$3\frac{1}{2}$	$\frac{5}{8} \times \frac{5}{8} \times 4$	$7\frac{1}{8}$
655	$1\frac{1}{2}$	$4\frac{1}{2}$	$\frac{3}{4} \times \frac{3}{4} \times 5$	$8\frac{7}{8}$

### Facing Tools

Used for grooving, recessing, face-forming and counterboring. Drills, counterbores, pilots, etc., can be held in the center hole. Price includes Wrench and Two High Speed Cutters.



No.	Dimensions of Shank, Inches			Dimensions of Head, Inches			Extreme Lgth. Ins.
	Outside Dia.	Dia. Hole	Lgth.	Wth.	Size of Cutter Bit	Dia. Ctr. Hole	
660	$\frac{5}{8}$	$2\frac{5}{64}$	$1\frac{7}{8}$	$2\frac{3}{4}$	$\frac{1}{4} \times \frac{3}{4}$	$\frac{5}{8}$	$3\frac{1}{4}$
661	$\frac{3}{4}$	$2\frac{5}{64}$	$1\frac{7}{8}$	$2\frac{3}{4}$	$\frac{1}{4} \times \frac{3}{4}$	$\frac{5}{8}$	$3\frac{1}{4}$
662	$\frac{7}{8}$	$2\frac{9}{64}$	$2\frac{7}{16}$	$3\frac{1}{4}$	$\frac{1}{4} \times \frac{3}{4}$	$\frac{5}{8}$	4
663	1	$2\frac{17}{32}$	$2\frac{1}{4}$	4	$\frac{5}{16} \times \frac{7}{8}$	$\frac{3}{4}$	4
664	$1\frac{1}{4}$	$2\frac{1}{32}$	$2\frac{15}{16}$	$4\frac{3}{4}$	$\frac{3}{8} \times 1$	$\frac{7}{8}$	$5\frac{1}{2}$
665	$1\frac{1}{2}$	$2\frac{9}{32}$	$3\frac{3}{4}$	5	$\frac{3}{8} \times 1$	$\frac{7}{8}$	$5\frac{1}{2}$





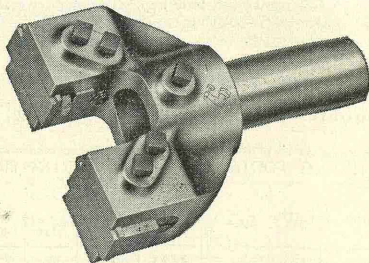
## ARMSTRONG Tool Holders

For Screw Machines and Turret Lathes

### Turret Knurling Tools

This tool holds standard size knurls. The knurl pins can easily be removed to insert knurls of any pattern or pitch.

The cross-slides are moved in or out to desired capacity and are locked at proper adjustment by set screws. A bushing may be used in the center hole to support the work.



These tools are drop forged from special steel. Either diamond or straight line pattern knurls can be furnished in coarse, medium or fine pitch. (See Page 16.)

Each tool is equipped with one pair of medium diamond knurls with standard face unless otherwise specified.

No.	Dimensions of Shank, Inches			Knurling Capacity, Inches		Max. Width Head Ins.	Ex- treme Lgth. Ins.
	Dia.	Dia. Hole	Lgth.	Diam.	Max. Lgth.		
670	$\frac{5}{8}$	$\frac{7}{16}$	$2\frac{1}{2}$	$\frac{1}{8}$ to $\frac{3}{4}$	$1\frac{5}{8}$	$3\frac{1}{2}$	$4\frac{13}{16}$
671	1	$\frac{7}{16}$	$2\frac{1}{2}$	$\frac{1}{8}$ to $\frac{3}{4}$	$1\frac{5}{8}$	$3\frac{1}{2}$	$4\frac{13}{16}$
672	$1\frac{1}{4}$	$\frac{21}{32}$	3	$\frac{1}{8}$ to 1	$2\frac{1}{2}$	$4\frac{3}{4}$	$6\frac{1}{8}$
673	$1\frac{1}{2}$	$\frac{13}{16}$	$3\frac{7}{16}$	$\frac{1}{4}$ to $1\frac{1}{2}$	$3\frac{1}{4}$	$6\frac{1}{4}$	$7\frac{11}{16}$
674	$1\frac{3}{4}$	$\frac{29}{32}$	$3\frac{5}{8}$	$\frac{1}{2}$ to 2	4	$7\frac{3}{8}$	$8\frac{7}{8}$

### Extra Knurls

For Knurling Tool No.	Diameter	Std. Face Width	Full Face Width	Hole Diameter	Thick-ness
670, 671, 672	$\frac{7}{8}$	$\frac{3}{16}$	$\frac{5}{16}$	$\frac{7}{32}$	$\frac{5}{16}$
673, 674	$\frac{3}{4}$	$\frac{1}{4}$	$\frac{3}{8}$	$\frac{1}{4}$	$\frac{3}{8}$



# ARMSTRONG High Speed Steel Bits

Unfinished—Hardened

Require grinding only to make them ready for use  
in ARMSTRONG Tool Holders



ARMSTRONG High Speed Bits are cut to proper size, carefully heat treated, hardened, tempered and tested.



## Squares For Turning and Boring Tools

FOR TURNING TOOLS				FOR BORING TOOLS			
No.	Size	Lgth.		No.	Bar Angle	Size	Lgth.
2301	$3\frac{7}{8}$	$1\frac{3}{4}$		2321	90°	$\frac{3}{16}$	1
2302	$\frac{1}{4}$	$2\frac{1}{8}$		2368	30	$\frac{3}{16}$	$1\frac{1}{8}$
2303	$\frac{5}{16}$	$2\frac{3}{4}$		2322	45	$\frac{3}{16}$	$1\frac{1}{4}$
2304	$\frac{3}{8}$	$3\frac{1}{4}$		2323	90	$\frac{1}{4}$	$1\frac{1}{4}$
2305	$\frac{7}{16}$	$3\frac{3}{4}$		2369	30	$\frac{1}{4}$	$1\frac{1}{2}$
2306	$\frac{1}{2}$	$4\frac{1}{4}$		2324	45	$\frac{1}{4}$	$1\frac{3}{4}$
2307	$\frac{5}{8}$	5		2325	90	$\frac{5}{16}$	$1\frac{1}{2}$
2308	$\frac{3}{4}$	$5\frac{3}{4}$		2370	30	$\frac{5}{16}$	$1\frac{7}{8}$
2309	$\frac{7}{8}$	$6\frac{1}{2}$		2326	45	$\frac{5}{16}$	$2\frac{1}{4}$
2310	1	$7\frac{1}{4}$		2327	90	$\frac{3}{8}$	$1\frac{7}{8}$
2311	$1\frac{1}{8}$	8		2371	30	$\frac{3}{8}$	$2\frac{1}{4}$
2312	$1\frac{1}{4}$	$9\frac{1}{2}$		2328	45	$\frac{3}{8}$	$2\frac{5}{8}$
<div data-bbox="123 1232 220 1376" data-label="Image"> </div> <h2>Flats For Planer &amp; Gang Planer Tools</h2>				2329	90	$\frac{7}{16}$	$2\frac{1}{8}$
				2372	30	$\frac{7}{16}$	$2\frac{1}{2}$
				2330	45	$\frac{7}{16}$	$2\frac{7}{8}$
				2331	90	$\frac{1}{2}$	$2\frac{3}{8}$
				2373	30	$\frac{1}{2}$	$2\frac{13}{16}$
				2332	45	$\frac{1}{2}$	$3\frac{1}{4}$
				2333	90	$\frac{5}{8}$	$2\frac{3}{4}$
				2374	30	$\frac{5}{8}$	$3\frac{3}{8}$
				2334	45	$\frac{5}{8}$	4
				2335	90	$\frac{3}{4}$	$3\frac{1}{8}$
				2375	30	$\frac{3}{4}$	$4\frac{1}{16}$
				2336	45	$\frac{3}{4}$	5
2351	$\frac{1}{4} \times \frac{3}{8}$	$2\frac{1}{2}$					
2352	$\frac{5}{16} \times \frac{7}{16}$	3					
2353	$\frac{3}{8} \times \frac{1}{2}$	$3\frac{1}{2}$					
2354	$\frac{1}{2} \times \frac{3}{4}$	$4\frac{1}{4}$					
2355	$\frac{7}{8} \times \frac{7}{8}$	5					
2356	$\frac{3}{4} \times 1$	6					
2357	$\frac{7}{8} \times 1\frac{1}{8}$	7					



# ARMSTRONG

## High Speed Cutter Blades

**Ready for use in Cutting Off and Side Tool Holders  
Finished**



ARMSTRONG High Speed Cutter Blades are made from our very best high speed steel. Finished cutter blades are heat treated, hardened, ground on the edges and are ready for use in ARMSTRONG Tool Holders. When ordering blades, please specify catalog number.

### Bevel For Cutting-Off Tools

No. Left Hand	No. Straight Shank	No. Right Hand	Size	Length	For Tool Nos.
2451	2401	2491	$\frac{3}{32} \times \frac{1}{2}$	4 $\frac{1}{2}$	19-29
2452	2402	2492	$\frac{3}{32} \times \frac{5}{8}$	5	20-30
2453	2403	2493	$\frac{1}{8} \times \frac{3}{4}$	6	21-31
2454	2404	2494	$\frac{1}{8} \times \frac{7}{8}$	7	22-32
2455	2405	2495	$\frac{3}{16} \times 1$	8	23-33
2456	2406	2496	$\frac{3}{16} \times 1 \frac{1}{8}$	9	24-34
2457	2407	2497	$\frac{1}{4} \times 1 \frac{1}{4}$	10	25-35
2458	2408	2498	$\frac{1}{4} \times 1 \frac{3}{8}$	11	26-36

### Special Shape For Side Tools

No. Left Hand Offset	No. Right Hand Offset	No. Left Hand Str.	No. Right Hand Str.	Size	Length	For Tool Nos.
2511	2621	2651	2661	$\frac{1}{8} \times \frac{1}{4}$	4 $\frac{1}{2}$	69-79
2512	2622	2652	2662	$\frac{5}{32} \times \frac{5}{8}$	5	70-80
2513	2623	2653	2663	$\frac{3}{16} \times \frac{3}{4}$	6	71-81
2514	2624	2654	2664	$\frac{1}{4} \times \frac{7}{8}$	7	72-82
2515	2625	2655	2665	$\frac{5}{16} \times 1$	8	73-83
2516	2626	2656	2666	$\frac{3}{8} \times 1 \frac{1}{4}$	9	74-84
2517	2627	2657	2667	$\frac{7}{16} \times 1 \frac{3}{8}$	10	75-85
2518	2628	2658	2668	$\frac{1}{2} \times 1 \frac{1}{2}$	11	76-86





## ARMSTRONG Plain Drill Drifts

ARMSTRONG Plain Drill Drifts are drop forged from selected steel, finished and hardened.



No.	Length	Fitting
<b>1</b>	5	No. 1 sockets and sleeves
<b>2</b>	6	No. 2 sockets and sleeves
<b>3</b>	7	No. 3 sockets and sleeves
<b>4</b>	8½	No. 4, 5 and 6 sockets and sleeves

## ARMSTRONG Safety Drill Drift

### Automatic—Convenient—Effective



The ARMSTRONG Safety Drift combines hammer and drift thus leaving one hand free to support the tool to be removed.

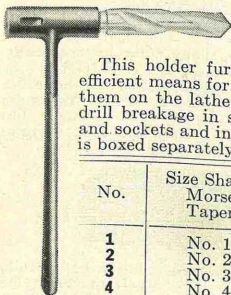
The heavy handle is slidably mounted upon the blade, which is automatically kept extended, when not in operation, by a low tension coil spring. Readily removes the most stubborn drill.

One of these drifts attached to each drill press will soon save enough to repay its cost many times.

No.	Capacity Morse Taper	Recommended for
<b>1-A</b>	No. 1, 2 or 3	No. 1 or 2
<b>2-A</b>	No. 2, 3 or 4	No. 2 or 3
<b>3-A</b>	No. 3, 4 or 5	No. 3 or 4
<b>4-A</b>	No. 4, 5 or 6	No. 4 or 5



## ARMSTRONG Safety Drill Holder

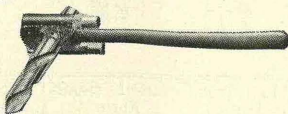


This holder furnishes the simplest, safest and most efficient means for holding taper shank drills when using them on the lathe. Its use will eliminate 90 per cent of drill breakage in such work, mutilation of drill shanks and sockets and injury to the operator. Each drill holder is boxed separately.

No.	Size Shank Morse Taper	Holds Drills
1	No. 1	$\frac{1}{16}$ to $\frac{9}{16}$
2	No. 2	$\frac{37}{64}$ to $\frac{29}{32}$
3	No. 3	$\frac{59}{64}$ to $1\frac{1}{4}$
4	No. 4	$1\frac{17}{64}$ to 2
5	No. 5	$2\frac{1}{64}$ to 3

## ARMSTRONG "U" Clamp Drill Holder

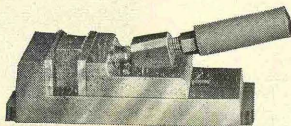
This tool is designed for use in holding straight shank drills, reamers or similar tools, with safety to the operator and without danger of injury to the tool held.



No.	Capacity	Length
200	$\frac{3}{8}$ to 1	11
300	$\frac{5}{8}$ to $1\frac{1}{2}$	13
400	$\frac{7}{8}$ to 2	$15\frac{1}{2}$
500	$1\frac{1}{4}$ to 3	18

## ARMSTRONG Quick Action Drill Vise

An extremely handy vise for tool makers and general machine shop use. One turn of the handle sets or releases the vise. Instantly adjustable to any size within its capacity.



No.	CAPACITY			Dimensions of Lugs		Length Overall
	Width of Jaw	Depth of Jaw	Opens	Height	Width	
1-V	2	$\frac{15}{16}$	$1\frac{3}{4}$	$\frac{5}{16}$	$\frac{1}{4}$	6
2-V	$2\frac{3}{4}$	$1\frac{3}{16}$	$2\frac{1}{2}$	$\frac{7}{16}$	$\frac{3}{8}$	$7\frac{3}{4}$
3-V	$3\frac{1}{2}$	$1\frac{7}{16}$	3	$\frac{9}{16}$	$\frac{7}{16}$	$9\frac{3}{8}$



## ARMSTRONG Armide Carbide-Tipped Cutters

ARMIDE Carbide-Tipped Cutters are designed for use in ARMSTRONG Carbide Tool Holders. They come in two grades ARMIDE (RED) for machining steel, and ARMIDE (GRAY) for machining cast iron, brass, bronze, aluminum, and non-metallics. Because of the extreme hardness of ARMIDE, cutter bits tipped with this material will hold their cutting edge much longer than the finest tool steels and will machine from 10 to 100 times as many between grindings.



When ordering ARMIDE Cutters please specify (1) catalog number, (2) whether ARMIDE RED (For Steel) or ARMIDE GRAY (For Cast Iron and Non-Ferrous machining) and (3) Quantity. Unless RED or GRAY is specified on order, ARMIDE GRAY (for cast iron and non-ferrous machining) will be shipped.



Left Hand Form 7 No.	Right Hand Form 4 No.	Square Shank Turning Cutters Shank Size	
<b>M-71</b>	<b>M-41</b>	$\frac{1}{4} \times \frac{1}{4} \times 1\frac{3}{4}$	
<b>M-72</b>	<b>M-42</b>	$\frac{5}{16} \times \frac{5}{16} \times 2\frac{1}{4}$	
<b>M-73</b>	<b>M-43</b>	$\frac{3}{8} \times \frac{3}{8} \times 2\frac{1}{2}$	
<b>M-74</b>	<b>M-44</b>	$\frac{7}{16} \times \frac{7}{16} \times 3$	
<b>M-75</b>	<b>M-45</b>	$\frac{1}{2} \times \frac{1}{2} \times 3\frac{1}{2}$	
<b>M-77</b>	<b>M-47</b>	$\frac{5}{8} \times \frac{5}{8} \times 4$	
<b>M-78</b>	<b>M-48</b>	$\frac{3}{4} \times \frac{3}{4} \times 4\frac{1}{2}$	



Square Nose Form 1		Sq. Shank Cutters Shank Size	80° Form 12 No.	
<b>M-11</b>		$\frac{1}{4} \times \frac{1}{4} \times 1\frac{3}{4}$	<b>M-121</b>	
<b>M-12</b>		$\frac{5}{16} \times \frac{5}{16} \times 2\frac{1}{4}$	<b>M-122</b>	
<b>M-13</b>		$\frac{3}{8} \times \frac{3}{8} \times 2\frac{1}{2}$	<b>M-123</b>	
<b>M-14</b>		$\frac{7}{16} \times \frac{7}{16} \times 3$	<b>M-124</b>	
<b>M-15</b>		$\frac{1}{2} \times \frac{1}{2} \times 3\frac{1}{2}$	<b>M-125</b>	
<b>M-17</b>		$\frac{5}{8} \times \frac{5}{8} \times 4$	<b>M-127</b>	
<b>M-18</b>		$\frac{3}{4} \times \frac{3}{4} \times 4\frac{1}{2}$	<b>M-128</b>	

Continued on page 29.





## ARMSTRONG Armide Carbide-Tipped Cutters

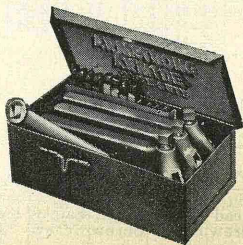


Left Hand Form 14 No.	Right Hand Form 13 No.	Square Shank Turning Cutters Shank Size
<b>M-141</b>	<b>M-131</b>	$\frac{1}{4} \times \frac{1}{4} \times 1\frac{3}{4}$
<b>M-142</b>	<b>M-132</b>	$\frac{5}{16} \times \frac{5}{16} \times 2\frac{1}{4}$
<b>M-143</b>	<b>M-133</b>	$\frac{3}{8} \times \frac{3}{8} \times 2\frac{1}{2}$
<b>M-144</b>	<b>M-134</b>	$\frac{7}{16} \times \frac{7}{16} \times 3$
<b>M-145</b>	<b>M-135</b>	$\frac{1}{2} \times \frac{1}{2} \times 3\frac{1}{2}$
<b>M-147</b>	<b>M-137</b>	$\frac{5}{8} \times \frac{5}{8} \times 4$
<b>M-148</b>	<b>M-138</b>	$\frac{3}{4} \times \frac{3}{4} \times 4\frac{1}{2}$

Both ARMIDE (red) and ARMIDE (Gray) Cutter-Bits come ready-ground in six standard cutter shapes. When ordering be sure to specify the catalog number and whether you wish Armide Red or Armide Gray. Unless otherwise specified, Armide Gray (for cast iron and non-ferrous machining) will always be shipped

## ARMSTRONG Armide Tool Sets

ARMIDE sets are available in five sizes. Each set consists of one straight shank, one right hand offset and one left hand offset ARMSTRONG Carbide Tool Holder; eight ARMIDE Cutters, four Red and four Gray.



Set No.	Size of Cutter Shank	Size of Tool Holder Shank
<b>M-0A</b>	$\frac{1}{8}$ "	$\frac{3}{8} \times \frac{15}{16} \times 6$
<b>M-1A</b>	$\frac{5}{16}$ "	$\frac{1}{2} \times 1\frac{1}{4} \times 7$
<b>M-2A</b>	$\frac{3}{8}$ "	$\frac{5}{8} \times 1\frac{1}{2} \times 8$
<b>M-3A</b>	$\frac{7}{16}$ "	$\frac{3}{4} \times 1\frac{3}{4} \times 9$
<b>M-4A</b>	$\frac{1}{2}$ "	$\frac{7}{8} \times 1\frac{7}{8} \times 10$



# ARMSTRONG

## Drop Forged Lathe Dogs

With Either Square Head or Safety Screws



ARMSTRONG Lathe Dogs are drop forged from selected steel to give exceptional toughness and stiffness. The hubs are large enough to permit retapping. The screws are made from fine alloy steel with American National Coarse (U.S.Std.) thread and are hardened on the point.



### REGULAR

STRAIGHT		BENT		Capacity	STRAIGHT		BENT		Capacity
Square Head Screw	Safety Screw	Square Head Screw	Safety Screw		Square Head Screw	Safety Screw	Square Head Screw	Safety Screw	
21	21-H	1	1-H	$\frac{3}{8}$	28	28-H	8	8-H	.2
22	22-H	2	2-H	$\frac{1}{2}$	29	29-H	9	9-H	2 $\frac{1}{2}$
23	23-H	3	3-H	$\frac{3}{4}$	30	30-H	10	10-H	3
24	24-H	4	4-H	1	31	31-H	11	11-H	3 $\frac{1}{2}$
25	25-H	5	5-H	1 $\frac{1}{4}$	32	32-H	12	12-H	4
26	26-H	6	6-H	1 $\frac{1}{2}$	33	33-H	13	13-H	5
27	27-H	7	7-H	1 $\frac{3}{4}$			14	14-H	6

### HEAVY DUTY



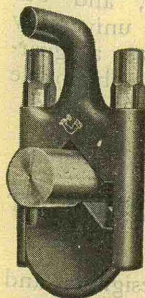
No. STRAIGHT		No. BENT		Capacity
Sq. Head Screw	Safety Screw	Sq. Head Screw	Safety Screw	
132	132-H	112	112-H	4"
133	133-H	113	113-H	5"
134	134-H	114	114-H	6"



Price does not include wrench. When ordering dogs with safety screws specify whether wrenches are wanted or not.



## ARMSTRONG Safety Clamp Dog

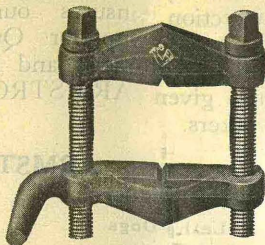


Will accommodate itself readily to work of any shape and will hold it securely and squarely, being especially adapted for use on finished work which would be liable to be damaged by the set screw of a common lathe dog. It possesses a wide range of adjustments and is well balanced.

No.	Capacity
1-U	$\frac{1}{8}$ to $\frac{5}{8}$
2-U	$\frac{3}{8}$ to 1
3-U	$\frac{5}{8}$ to $1\frac{1}{2}$
4-U	$\frac{7}{8}$ to 2
5-U	$1\frac{1}{4}$ to 3
6-U	$1\frac{3}{4}$ to 4
7-U	$2\frac{1}{2}$ to 5

## ARMSTRONG Clamp Lathe Dog

No.	Capacity Between Screws
11	$1\frac{3}{4}$
12	$2\frac{1}{4}$
13	$2\frac{3}{4}$
14	$3\frac{1}{2}$



## Milling Machine Dogs

For use on taper work carried between centers on milling machines. Drop forged steel. Screws are alloy steel, hardened on the point.



No.	Capacity
42	$\frac{1}{2}$
43	$\frac{3}{4}$
44	1
45	$1\frac{1}{4}$
46	$1\frac{1}{2}$
47	$1\frac{3}{4}$
48	2



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